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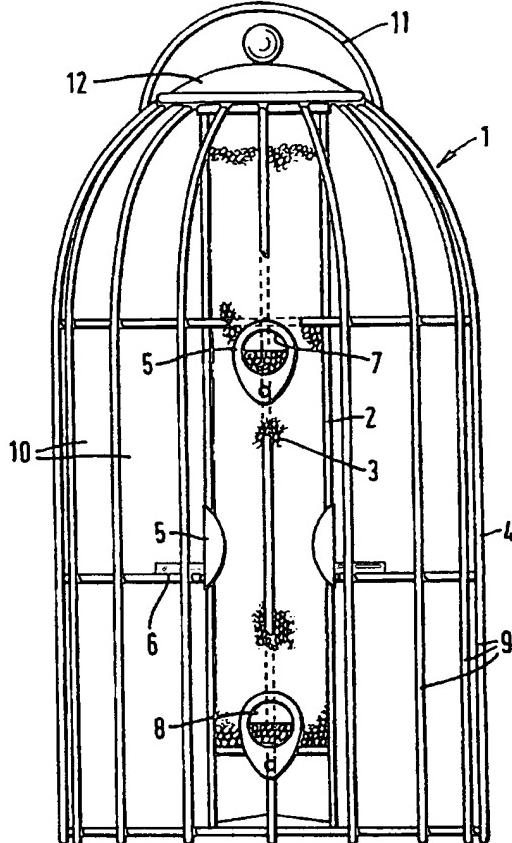
(56) Documents Cited

GB 2266830 A GB 2262696 A GB 2236468 A
WO 93/12649 A1 US 4434745 A

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(54) Food dispenser for birds

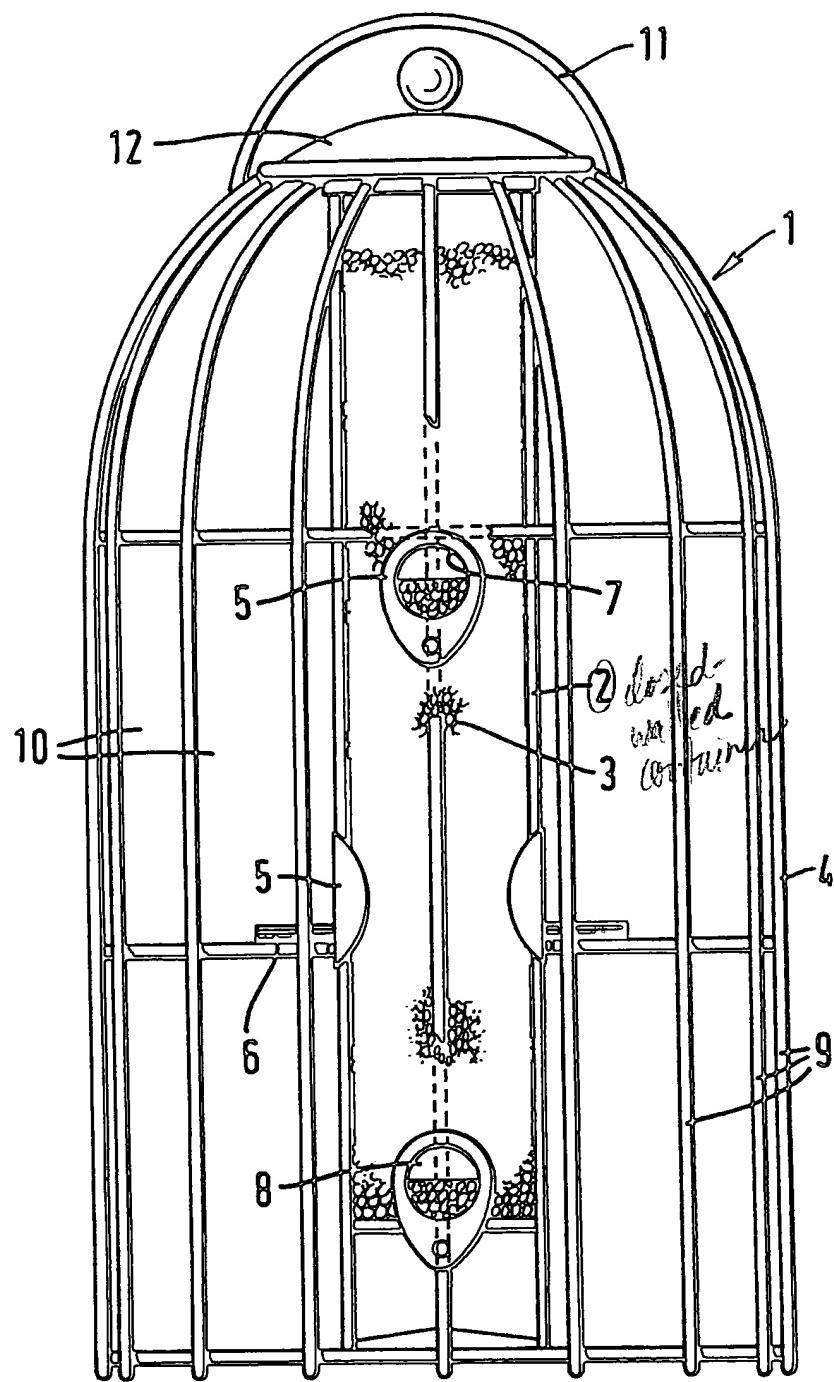
(57) A bird food dispensing system comprises: a closed-walled container 2 provided with feeding port 8, and an outer cage 4. The container holds bird seed and dispenses seeds only at the feeding ports. The cage surrounds the container and defines an enclosed space intermediate the container and cage. The cage is sized to provide generally free entry to and exit from this enclosed space, for comparatively small birds, while preventing entry of adult squirrels. The enclosed space is dimensioned to allow these comparatively small birds to readily move about therewithin. Cylindrical, and spherical cages are contemplated.



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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.



FOOD DISPENSERS FOR BIRDS

This invention relates to food dispensers for birds.

Apart from the ubiquitous bird table on which any form of food can be placed, refillable food dispensers for garden birds have tended to fall into one of two distinctly separate types, one suitable for holding peanuts and other large sized seeds such as sunflower seeds and one suitable for holding small seeds and grains.

The peanut holders take the form of a container provided with a wall made of wire mesh which retains the peanuts or sunflower seeds so that they can be pecked through the mesh by a songbird grasping the mesh with its feet. Such dispensers have proved irresistible to squirrels. Once they can reach the mesh wall, they are able to hang on while gnawing at the nuts through the mesh. Before long they tend to gnaw through the mesh itself. Even if they do not achieve this, they usually learn how to break into a simple peanut container such as the common cylindrical mesh container with metal end caps which is suspended from a branch or bracket. The squirrels soon learn how to detach the container from its suspension, or how to detach the end caps from the cylinder. This simple form of peanut container, once squirrels have been attracted, tends to have only a limited useful life.

With the aim of resisting or deterring squirrel attack, a number of proposals have been made for nut holders. Some involve the use of overhanging baffles to make it more difficult for the squirrel to reach the mesh wall. However, squirrels can jump substantial distances and can often reach the mesh wall by a sideways jump even if they cannot reach it directly because of an intervening baffle. Other more complicated engineering solutions involving spring-loaded covers have also been suggested but the majority of these have proved to have only a limited value in deterring squirrels or a limited commercial success because of their

expense or unreliability. However, one type of nut feeder has proved to be both a commercial success and successful in deterring squirrels, namely nut feeders of the kind described and illustrated in our copending British Patent Application No: 9021478.4 (published under number GB-A-2236468) and which are widely available under the Trade Mark NUTTERY. Two embodiments are described in our British Patent Specification. In one embodiment a means is provided for holding a conventional cylindrical mesh container for nuts or sunflower seeds centrally of the feeder. In the other embodiment the mesh container forms an integral element of the feeder. In both cases, an outer cage-like structure which has bands of contiguous elongate apertures (between the bars or mesh of the cage) enabling entry of small songbirds into the structure and into the space between the outer cage and the central mesh nut holder. The size of the apertures between the bars or mesh of the cage structure is designed to be too great for an adult squirrel to enter the space. No doubt as a direct consequence of the commercial success of the embodiments of nut feeder illustrated in our aforesaid patent application, other manufacturers have introduced similar products which also employ an outer cage structure and a central mesh nut holder with space between the two for small birds to enter and exit.

Many types of garden birds prefer to feed on small seeds rather than the peanuts or sunflower seeds which are suitable for use in the aforesaid nut feeders. To dispense food of this kind, a quite different type of feeder has been developed based upon designs which have long been used in the feeding of caged birds such as budgerigars or canaries. The feeders generally comprise a central stock of seeds usually stored in a housing, often cylindrical, formed of transparent plastics material, which seeds fall by gravity to one or more feeding ports. The feeding ports may simply be openings at the bottom of the feeder into a surrounding dish which may be integrally moulded with the plastics

cylinder. In other cases, a plurality of small openings are spaced along the length of the plastics tubular container. The size and geometry of the openings is chosen so that the food does not simply pour therethrough. Usually a simple baffle partly closing the opening is sufficient for this purpose.

The plastics material is not so easily gripped by a marauding squirrel, but nevertheless when the individual feeding ports are provided with individual wooden perches for birds feeding thereat, this advantage is negated. To overcome the squirrel problem, small seed feeders have generally relied upon the use of baffles often in the form of a substantial canopy extending over the container to make it difficult for squirrels to reach the feeding ports. Since canopy and housing can usually be made of the same plastics material, this design has been strongly preferred because of the ease of fabrication. However, squirrels are very ingenious and in our experience many a design of small seed feeder claimed to be squirrel-proof has in practice proved after a short while to be less resistant to squirrels than the designers thought.

An alternative approach for small seed feeders is proposed in United States Patent 4434745 Perkins et al. The inventors in this case surround a conventional tubular transparent plastics seed feeder with an outer guard of mesh. The outer guard is separated from and supported upon the transparent plastics tubular seed feeder by an O-ring. The wire mesh has openings of as little as one third of an inch. Openings of this size in the mesh would be sufficient only for a bird perched on the outer mesh to push its head through the mesh towards the seed opening, something which a squirrel with a somewhat larger head could not achieve.

Although Perkins et al describe their feeder as squirrel-proof, in practice it would not be. The O-ring support for the outer mesh guard means that that guard is separated from the plastics tubular seed feeder by only a very small space, and as a means of support the O-ring is

rather flimsy. In time a squirrel might gnaw through the mesh or the O-ring. In the structure illustrated a squirrel has ready access to the bottom cap which is said to be made simply of plastics held in place by glue or staples. This structure is commonplace in simple tubular plastics seed feeders and has also been employed in cylindrical mesh nut feeders. Squirrels take little time to gnaw through the plastics or detach the staples. In addition, the top cap is maintained in position solely by the angled shoulder regions of the hanging wire. The hanging wire is said to be semi-rigid so as to allow it to be disengaged so that the top cap can be removed for refilling. Again, such a structure will not deter squirrels for very long. They only need to detach the container from its suspension to be able to make an entry by the top. The very design of the Perkins feeder with its outer guard overlying and only slightly separated from the plastics tubular seed feeder will tend to create points of weakness at the feeding ports. It will only be the mesh openings immediately overlying the ports which are visited by birds or squirrels, the remainder of the mesh being largely ignored. Repeated attention at these points will inevitably lead to weakness and eventually destruction.

In short, for a number of reasons the Perkins feeder fails in its principal object of being squirrel-proof.

Accordingly, there remains a long-felt, and up to now unsatisfied desire for an essentially squirrel-proof food dispenser adapted specifically for dispensing small seeds for garden birds. As will be clear from the description which follows, our solution to this problem draws upon our experience with the NUTTERY nut feeders of GB-A-2236468.

In accordance with the present invention we provide: a generally closed walled container provided with a single feeding port or a plurality of discrete spaced feeding ports, the container being adapted to hold bird seed and to dispense seeds at said feeding port(s), and an outer cage-like housing surrounding said container and defining an

enclosed space intermediate the container and housing within which small songbirds can readily move, the housing being defined by elongate elements together defining one or more bands of contiguous apertures sized to provide generally free entry to and exit from said enclosed space for small songbirds over a wide angle while preventing entry into said enclosed space at least of adult squirrels.

The housing may comprise an essentially fully open cage with a generally bell-shape, having a domed top and a generally cylindrical body and a flat base, but other configurations are feasible, including a spherical cage. It is not essential that the cage be fully open; it could have some panels blanked off, for example to provide a means for mounting the housing flat against a wall or other structure but it is important that the one or more bands of apertures should provide generally free entry into and exit from the enclosed space for small songbirds over a wide angle. This allows the birds a sense of freedom. They do not feel trapped within the enclosed space; a means of escape is readily available.

The size of the apertures to prevent entry of an adult squirrel can readily be established by trial and error experimentation, but the guidance given in our British Patent Specification 2 236 468 remains valid. Where the apertures are generally rectangular in configuration as illustrated in that specification, apertures with a width of 2-4 centimetres (and more preferably 2.5-3.5 centimetres) over at least a 5 centimetre length provide ready entry and exit for small songbirds and still keep the squirrels out. The apertures need not be rectangular. They could be generally square in shape, and in this case the square openings should preferably have a side of 4 centimetres or less. Although the openings may have a size down to 2 centimetres, the larger sizing is preferred in order that a greater variety of songbirds can make ready entry and exit.

The generally closed walled container for the seeds preferably has a plurality of discrete space feeding ports

along its length each provided with a perch, but could have but a single such port. One end of the container is preferably accessible from outside the dispenser for ready refilling. An access opening at one axial end of a tubular plastics container for the bird seed is suitably closed by a lid heavy enough to deter a squirrel trying to lift it and positioned so that attempts to simply lift it off its seat result in interference with a hanging loop for suspending the dispenser from a bracket, although lifting and sideways movement of the lid enables human access to the seed container for refilling. A partial obstruction, for example one or more bars across the access opening, will help to deter entry into the axial end of the container by a bird or by a squirrel, should the lid accidentally become detached. The lid may be joined to these obstructing bars by a short length of chain to prevent the lid being fully detached from the dispenser.

The invention is hereinafter more particularly described by way of example only with reference to the attached single figure of drawing which generally schematically illustrates a presently preferred embodiment in which parts of the outer cage have been omitted or shown in phantom in order to illustrate the internal structure.

A bird food dispenser 1 has a container 2 for bird seed 3 housed within a cage 4. The container 2 is in the form of a cylinder made of plastics material for example polycarbonate. The container 2 has a number of spaced feeding ports 5 where the birds may obtain food. Each feeding port 5 is supplied with a perch 6 and comprises an opening 7 with a rear wall 8 extending partially down the opening 7 with a tray being formed at the bottom of the opening 7 to allow seed to fall into the tray and be eaten by the birds without excessive spillage from the feeding port.

The housing 4 is a cage-like structure formed by a number of elongate elements 9 defining apertures 10. The apertures 10 form a band of contiguous apertures about the

housing 4. The apertures 10 are sized to allow the birds to enter the housing 4 but prevent the entry of squirrels. The container 2 and the housing 4 define a space so that birds may move freely within the housing 4. In the embodiment shown, the apertures 10 are elongate transversely of the band having a width of approximately 3 cm and a length of approximately 12 cm.

Reference may be made to the specification of our British Patent Specification 2 236 468, the disclosure of which is hereby incorporated by reference, for further details of the construction and materials of the outer cage 4.

The floor of the cage may be fully solid, or take the configuration shown in Fig. 8 of our aforesaid British Patent Specification though the central region 15 thereof is preferably solid to provide greater security against squirrels. Although the seed container 2 is of a different material to the base material of the outer cage, the outer cage is preferably provided with a plastics coating. The plastics material of the coating and the plastics material of the seed container 2 may be similar, though the coating for the cage will generally be coloured whilst the material of the container 2 will be transparent. Provided that the materials are compatible, the container 2 may be mounted within the cage, for example being located in axial rings at its opposed ends, and then may be held in place by melding confronting plastic surfaces or by the application of adhesive. The dispenser 1 is adapted to be suspended by loop 11. The container 2 is suitably open at its axial end adjacent the loop 11 for refilling with bird seed 3, the access opening being closed by lid 12. The lid 12 is suitably provided with a skirt or flange on its underside which fits within the access opening and is made of a material which makes it relatively heavy for a squirrel to lift when trying to make entry at that point. Lid 12 is configured so that simply lifting it will result in interference with the loop 11 or with a bracket when the

dispenser is suspended by loop 11 therefrom. For access to the access opening, the lid must be lifted and then moved sideways. Complete detachment of the lid is suitably prevented by a small length of chain attached to the lid and one or more bars which extend across the access opening. These bars may have the configuration and serve the same purpose of the U-shaped staple 81 described in our aforesaid British Patent Specification 2 236 468.

CLAIMS

1. A bird food dispensing system, comprising: a generally closed-walled container provided with a single feeding port or a plurality of discrete spaced feeding ports, the container being adapted to hold bird seed and to dispense seeds only at said feeding port(s), and an outer cage-like housing surrounding said container and defining an enclosed space intermediate the container and housing, the housing being defined by elongate elements together defining one or more bands of contiguous apertures sized to provide generally free entry to and exit from said enclosed space thereby providing many different entry and exit points for comparatively small birds, while preventing entry into said enclosed space at least of adult squirrels, said space being dimensioned to allow said comparatively small birds to readily move about therewithin.

2. A bird food dispensing system according to Claim 1, wherein said housing comprises an essentially fully open cage with a generally bell-shape, having a domed top and a generally cylindrical body with a flat base, and being arranged to be mounted so that the axis of said cylindrical body is oriented vertically.

3. A bird food dispensing system according to Claim 1, wherein the housing comprises an essentially fully open spherical cage.

4. A bird food dispensing system according to any preceding claim, wherein said contiguous apertures are generally rectangular with a width of 2 to 4 centimetres, preferably 2.5 to 3.5 centimetres, over at least a 5 centimetre length.

5. A bird food dispensing system according to any of Claims 1-3, wherein said contiguous apertures are generally square in shape with a side of 4 centimetres or less.

6. A bird food dispensing system according to any preceding claim, wherein the container is generally cylindrical and the bird food dispensing system is adapted to be mounted so that the axis of the container is oriented vertically.

7. A bird food dispensing system according to Claim 6, wherein the container is provided with a plurality of discrete spaced feeding ports along its length, each provided with a perch.

8. A bird food dispensing system according to any preceding claim, wherein one end of the container is accessible through an aperture in the housing from the exterior of the dispensing system enabling the container to be filled with bird seed from the exterior.

9. A bird food dispensing system according to Claim 8, wherein the container comprises a generally tubular plastics container having an access opening at one axial end thereof for filling of the container with bird seed, which axial end is closed by a lid heavy enough to deter a squirrel trying to lift it and positioned so that attempts to lift the seat result in interference with a hanging loop for suspending the dispensing system as a whole from a bracket or the like, access to the said axial end of the tubular container being achievable by lifting and sideways movement of the lid.

10. A bird food dispensing system according to Claim 9, wherein one or more bars form a partial obstruction across the opening at the said axial end, the lid being connected to said bar(s) by a short length of chain or the

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like to prevent the lid being fully detached from the dispensing system.

11. A bird food dispensing system substantially as hereinbefore described with reference to and as shown in the accompanying drawing.

Relevant Technical Fields

- (i) UK Cl (Ed.M) A1M (MEJ, MEL)
 (ii) Int Cl (Ed.5) A01K 39/00, 39/01

Search Examiner
 R D CAVILL

Date of completion of Search
 17 MAY 1994

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii)

Documents considered relevant following a search in respect of Claims :-
 1 TO 11

Categories of documents

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|----|---|----|---|
| X: | Document indicating lack of novelty or of inventive step. | P: | Document published on or after the declared priority date but before the filing date of the present application. |
| Y: | Document indicating lack of inventive step if combined with one or more other documents of the same category. | E: | Patent document published on or after, but with priority date earlier than, the filing date of the present application. |
| A: | Document indicating technological background and/or state of the art. | &: | Member of the same patent family; corresponding document. |

Category	Identity of document and relevant passages		Relevant to claim(s)
E, A	GB 2266830 A	(MANNING) see whole document	All
E, A	GB 2262696 A	(MOORE) see whole document	All
Y	GB 2236468 A	(LIPTON) see whole document	2, 4, 7
E, A	WO 93/12649 A1	(SMALLBONE) see whole document	All
X, Y	US 4434745	(PERKINS) see whole document and note column 2 line 17-20	X: 1, 5, 6, 8, 10 Y: 2, 4, 7

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